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By Ted Williams

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James Balog

Winter's Beacons

By definition, "deciduous" trees shed their foliage in autumn. But throughout most of the eastern half of our nation, a midwinter stroll though a mixed hardwood forest will confirm that a few species defy the rules. Among them is the American beech. The oval, serrated leaves have lost their chlorophyll, and as the low winter light passes through them, they glow like copper-sheathed lanterns. Two of the more plausible explanations are 1) that because dry leaves are relatively unpalatable to large browsers like deer and moose, they protect twigs, and 2) that because beeches grow in well-drained soil where water tends to leach out nutrients, the dead leaves that finally fall in spring provide a needed shot of fertilizer at the start of the growing season. Beeches produce small nuts relished by all manner of wildlife. And they have smooth bark that has long tempted graffitists. One specimen that fell in the 1930s and is now in the possession of the Filson Historical Society in Louisville, Kentucky, bears this inscription: "D. Boone Kill A Bar 1803 Zois."



Joel Sartore

Meet the Beetles

If you know children or adults who are squeamish about bugs, there's no better time for treatment than the middle of the winter and no better medicine than patent-leather beetles. There are two common species in the United States—one in Florida and one that lives throughout the East. Look for these inchand-a-quarter-long, shiny black insects under dead wood. In the northern part of their range they may be hibernating, probably protected with glycerin anti-freeze they've pumped into their cellular water. The patent-leather beetle is among the few species in the order Coleoptera that has a social structure and one of the few insects of any order in which adult males care for young, communicating to them with squeaks and preparing their food by chewing decaying wood and mixing in salivary secretions that aid digestion. Although these beetles can eat their way through oak, they are unlikely to bite. Pick one up and, if it isn't hibernating, it may emit alarm cries that sound like someone chewing on a deflated balloon. After the demonstration there's another teachable moment: Carefully replace the wood you've turned over, thereby preserving an insect-microbe community.



Bates Littlehales/Animals Animals EarthScenes

Bitter Harvest

Nature has a way of making wildlife staples with the longest shelf lives slightly less palatable so there will be something for animals to fall back on once the perishables get eaten. So it is with the scarlet, quarter-inch fruit of the chokeberry, now brightening the woods from the eastern seaboard as far west as Texas and Oklahoma and in settled areas of the West, where it has been transplanted. In the wane of February's Hunger Moon these berries, scorned earlier in the season by such woodland denizens as bobwhites, ruffed grouse, pheasants, and cedar waxwings, start tasting better and better. The name *chokeberry* derives from the fruit's extreme bitterness. While humans have to muster great will power to eat it raw, it is superb when sweetened with sugar and cooked into jam, juice, wine, or flavoring for soft drinks.

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Winfried Wisniewski/Minden Pictures

Snow Storm

Along all four major flyways snow geese are wafting south on the north wind, sometimes moving at 50 miles per hour and flying so high you can see only their V formations faintly penciled on azure. Yet through the still, cold air their *whouk, whouk, whouk* calls carry so well that the flock seems to be at tree-top level. If you're near a coastal marsh, wet grassland, or farm field, you may see them tumble down in what is aptly described as the "falling-leaf maneuver." For a few short weeks they'll gorge on berries, sedges, grasses, rushes, and cultivated grains. Then, sometimes as early as February, they'll start back to their Arctic and subarctic breeding grounds. Both the lesser and greater snow goose have made stunning recoveries since 1916, when market gunners had depleted them to the point that even sport hunting was outlawed. Pushed inland by coastal wetland destruction and pulled by abundant agricultural grains, the mid-continent population of lesser snow geese has exploded to the point that it is destroying its own summer habitat by denuding the tundra of vegetation. Hunting, which resumed in 1975, has had little effect even though managers have waived traditional prohibitions against using electronic calls and shotguns that hold more than three shells.

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Velvet Foot

Most mushrooms you encounter in the winter woods across the northern states are the "bracket fungi," the pretty trophies that don't rot and on which you may break your teeth if you try to eat them. But one delicious, soft-bodied mushroom survives—in fact, thrives—in colder temperatures. This is the velvet foot, or winter, mushroom, and like the bracket fungi, you're apt to find it above the snow line because it grows only on wood, especially elm, willow, and poplar. The velvet foot usually fruits in clusters. Its stems are fuzzy and brown, its caps sticky. If there's a ring around the stem, be careful, because you've probably found the deadly galerina instead of the velvet foot. Other fungi have climbed no higher than the stratosphere and only as spores, but the velvet foot has fruited in earth orbit. In 1993 it was cultured as part of the joint Space Shuttle *Columbia*/Spacelab D-2 mission. The velvet foot typically bends its stem near the base, then grows straight up so that it can drop its spores cleanly. In space, however, it grew in random directions, proving that it is oriented by gravity.



Andrew Parkinson/Minden Pictures

Pesky Pranksters

Americans are conflicted about gray squirrels, commonly applying to them such adjectives as "cute," "perky," "pesky," "noisy," "greedy," and, in rural areas, "delicious." Now through the central and eastern states (their native range) and much of the West (where they've been introduced), these prankish marauders are shoring up their winter "dreys," or nests, which are better insulated than the ones they build in summer. In suburbia, to which the species has adapted so well, dreys are frequently constructed with such material as attic insulation. Although gray squirrels don't hibernate, they take to their dreys in periods of extreme cold. Breeding activity starts in midwinter with chattering males chasing females on the ground and around tree trunks. The old saw that there is no such thing as a squirrel-proof bird feeder (at least one without screening) has finally been put to rest with the Yankee Flipper, a cylindrical device with a metal, battery-charged base that spins with the weight of a squirrel, flipping it onto the ground. Look for "squirrel angels" in the snow.



Jan Vermeer/Foto Natura/Minden Pictures

Eating Upside Down

If you see one pine siskin, you're apt to see more—lots more. Especially in winters when hemlock, alder, birch, spruce, and cedar seeds are scarce in the boreal forests of Canada and the northern states, these delicate little finches settle like wet snow into backyards and woodlots as far south as Florida and Baja California. Often they travel with their close relatives, the goldfinches, which they resemble both physically and in their strong, swift, undulating flight.

The name siskin derives from the sound of the call notes, which, when flocks are large, can fill the air with a hum easily confused with gasoline-powered machinery. Like chickadees and titmice, foraging siskins frequently hang upside down, especially when gleaning seeds of conifers.

Because they spend much of their lives in the unpeopled North Woods, they evince little fear of humans. In Birds of Massachusetts, ornithologist Edward Forbush documented the experience related to him in 1926 (along with photographic documentation) by one E.R. Davis of Leominister, Massachusetts. Davis liked to sleep in on winter mornings, and whenever he had neglected to fill the feeder the pine siskins showed their displeasure by flying in the open window and hopping about on the bed near his face. "If he simulated sleep and their dish of seeds was covered," wrote Forbush, "some of them pulled his hair, and if he then showed no signs of animation, they seemed to brace backward and pull harder. They have been known even to tweak his ears and nose. Finally when he opened his eyes and uncovered the food dish, they hopped upon it and began to eat. One morning Mr. Davis covered his head, leaving only a small hole through which to observe the birds. At first his feathered visitors were at a loss, but finally one discovered the peephole and reaching in began tapping his friend on the forehead. When Mr. Davis finally turned and reached for the food dish, one bird rode over to it on his hand."



Alan G. Nelson/Animals Animals

Northern Exposure

While other birds flee our northern winter or tough it out, puffed against the icy blast, white-tailed ptarmigans—high in the jagged mountains of Alaska, western Canada, and south to northern New Mexico—can't seem to get enough of it. Except when feeding on their staple, willow buds, they generally avoid elevations low enough to support trees. No other native bird spends most of its life above timberline. This, our smallest grouse and the only ptarmigan confined to North America, has adapted to its frigid environment by evolving feathers filled with insulating air spaces, an undercoat of thick down, and feathered nostrils, eyelids, and toes. In addition to serving as insulation, toe feathers (grown in winter) act as snowshoes, increasing the surface area of the foot by a factor of four. At night and during much of the day the birds roost under the snow, where the temperature can't dip much below 32 degrees Fahrenheit. White-tailed ptarmigans seem actually to be stressed by spring thaws during which they can be seen bathing in snow drifts.

Should you find yourself in their winter habitat (doubtless while helicopter skiing), listen for their soft, low hoots and clucking emanating from flocks that may number as many as 95 birds. And be prepared for them to burst up between your legs, showering you with snow.